

Serial No. 09/508,136
Docket No. KEL001PA

Amendment to the Specification:

Please replace the underlined title on page 1 of the application with the same title which is not underlined as shown in the following rewritten title:

--IMPROVEMENTS RELATING TO ELECTRICAL POWER MEASUREMENT
IMPROVEMENTS RELATING TO ELECTRICAL POWER MEASUREMENT--

Please insert the following new heading before the first full paragraph on page 1:

--BACKGROUND OF THE INVENTION--

Please insert the following new heading before the paragraph bridging pages 4 and 5:

--SUMMARY OF THE INVENTION--

Please insert the following new heading before the paragraph beginning at line 26 on page 11:

--BRIEF DESCRIPTION OF THE DRAWING--

Please insert the following new heading before the paragraph beginning at line 21 of page 12:

--DETAILED DESCRIPTION OF THE INVENTION--

Serial No. 09/508,136
Docket No. KEL001PA

Please replace the paragraph beginning at line 6 of page 13 with the following rewritten paragraph:

Taking each of these stages in turn, the conversion stage 3 4 of the electronic circuit comprises a step-down voltage interface 14 and a current-to-voltage converter 16. One side of the step-down voltage interface 14 is connected directly to the power supply system 2 being measured and the other side provides scaled down voltage signals v_{va}, v_{vb}, v_{vc} representative of the magnitudes of voltage of the power supply system 2. Similarly, one side of the current-to-voltage converter 16 is connected directly to the power supply system 2 and the other side provides voltage signals v_{ia}, v_{ib}, v_{ic} representative of the magnitudes of current of the power supply system 2. These outputs from the step-down voltage interface 14 and the current-to-voltage converter 16 are passed to the switchable filtering stage 6.

Please replace the paragraph beginning at line 25 of page 28 with the following rewritten paragraph:

The present invention is based on a novel appreciation of the definitions of electric power parameters. These definitions are the subject of complex mathematical analysis which is necessary to explain the characteristics of single-phase and multiphase power distribution. In order to better understand the new theories underlying the present invention, reference should be made to a paper presented in three [papers] parts, authored by the inventor, Foroozan Ghassemi, entitled "A New Concept In AC Power Theory", and published in the IEE Proceedings, Pt C, Vol. 147, No. 6, 2000.

Please delete pages 29-52 of the specification.

Please insert the following new paragraph as the last paragraph on page 53:

Serial No. 09/508,136
Docket No. KEL001PA

--What is claimed is:--

Please replace the underlined heading at the top of page 54 of the application with the same heading which is not underlined as shown in the following rewritten heading:

--CLAIMS

CLAIMS--

Please replace the ABSTRACT OF THE DISCLOSURE with the following rewritten ABSTRACT OF THE DISCLOSURE as a new separate page 65:

--ABSTRACT

Improvements Relating to Electrical Power Measurement

ABSTRACT OF THE DISCLOSURE

An electric power meter (1,201) is described which implements a method of measuring the value of an electrical power parameter, such as e.g., Universal Apparent Power or Universal Power Factor, of an electrical power signal. The method is implemented in the time domain and comprises by: calculating a first instantaneous power component ($pp(t)$) as the product of an instantaneous voltage signal (v_a, v_b, v_c) of the electrical power signal and an instantaneous current signal (i_a, i_b, i_c) of the electrical power signal, carrying out a relative phase shift between the instantaneous voltage signal (v_a, v_b, v_c) and the instantaneous current signal (i_a, i_b, i_c); and calculating a second instantaneous power component ($pq(t)$) as the product of the relatively phase-shifted instantaneous voltage and instantaneous current signals (i_a, i_b, i_c). The first and second instantaneous power components ($pp(t), pq(t)$) are then RMS averaged to determine their respective magnitudes. Both of the calculated magnitudes are then used to determine the value of the electrical power parameter. The method can alternatively be implemented in the frequency domain to produce equivalent measurement values.

(Figure 2)--